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Docket No. CIB-T104CX
Serial No. 09/680,858Remarks

Previously pending Claims 24 and 28-38 and new Claims 39-41 are pending in the subject application. By this Amendment, applicants have added new Claims 39-41. Support for these new claims can be found throughout the Specification and in particular in original Claims 1, 12 and 24. No new matter has been added by this Amendment.

Written Description (Claims 24 and 28-38)

Claims 24 and 28-38 have been rejected under 35 USC 112 for lack of written description. This rejection is respectfully traversed.

Once again the Applicants stress that the present Specification makes its perfectly clear to one of ordinary skill in the art how to practice the presently claimed invention. A mixed duplex oligonucleotide (MDON) is prepared that has homologous and heterologous regions to the targeted gene. The heterologous region is where the mutation (addition, deletion, replacement) occurs when the MDON is introduced into a plant microspore. The Applicants understand that every patent is prosecuted on its own merits and prior references to the Kmiec '350 and '181 patents is to point out that in this art the description of inventions in this area of technology are different than say the written description requirements for cDNA which was the subject of the U. of C. vs. Eli Lilly case cited by the Examiner. The present claims are not directed to cDNA and can only be fairly described as set forth in the Specification and pending claims. Applicants have described a method to make mutations in microspores by the use of MDONS. The MDONS are oligonucleotides that have regions of homology and heterology to the native DNA sequences within the microspore genome that allow the mutation to be made. The Applicants have certainly taught that in the Specification and certainly satisfy the written description requirement. Enablement is another issue discussed below but the Applicants feel that the written description requirement is a long stretch and in this case is inappropriate.

Withdrawal of the written description rejection to Claims 24 and 28-38 is respectfully requested.

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Docket No. CIB-T104CX
Serial No. 09/680,858Enablement (Claims 24 and 28-38)

Claims 24 and 28-38 have been rejected under 35 USC 112 for lack of enablement. This rejection is respectfully traversed.

All of the presently pending claims are fully enabled under the requirements of 35 USC 112. The Applicants adopt and reiterate all of their prior arguments because those arguments rebut the enablement rejection. Furthermore, because gene repair, in and of itself, was known in the art at the time of the present priority date the application of the gene repair technology to microspores does not make the presently claimed inventions "not routine" and unpredictable as far as the physical laboratory procedures are concerned. Regarding "expectation of success" see the comment below on obviousness. See Kmiec '350 and Kmiec '181 both of record in this application and which describe and broadly claim gene repair methods. The scope of the present claims is similar to the scope of the Kmiec '350 and Kmiec '181 patent claims in that they do not specify a specific gene or a specific oligonucleotide. The Applicants are unaware of any reason to equate a "prophetic" example(s) with a "non-enabling" teaching. The Applicants have taught how to practice the claimed invention which is all that the Patent Laws require.

In view of the above, withdrawal of the non-enablement rejection to Claims 24 and 28-38 is respectfully requested.

Novelty (Claims 30-38)

Claims 30-38 have been rejected as being anticipated by the Swanson et al reference. This rejection is respectfully traversed.

Swanson et al cannot be used as a novelty destroying reference because Swanson et al have no data confirming that the mutations made to the microspores were genomic mutations to a specific gene responsible for imidazolinone resistance. Swanson et al speculate that "genes" have been modified but there is no data confirming that fact. Non-genomic DNA is also present in plant cells that could also have been mutated instead of genomic DNA.

Withdrawal of this rejection is respectfully requested.

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Docket No. CIB-T104CX
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Claims 24 and 28-36 remain rejected as being obvious over Kmiec '181 in view of Fennell et al and Hawkes et al all of which are already of record in this application. Applicants respectfully traverse this argument.

The Examiner has modified his prior rejection to add the teaching of Hawkes et al that one of ordinary skill in the art would have been motivated to introduce an MDON into a haploid plant cell such as a microspore or pollen cell. The Applicants point out that Hawkes et al does not teach or motivate anyone to introduce an MDON into a plant haploid cell in those general teaching terms. Rather Hawkes et al only discloses the introduction of MDONs into pollen cells. As argued in prior responses the Applicants have distinguished the differences between pollen and microspore cells. The Examiner's construction of the teachings of Hawkes et al is hindsight reconstruction or "Monday morning quarterbacking" based on the present disclosure after the fact. For this reason the present 103 rejection cannot be maintained. Additionally, it is important for the Applicants to once again mention that the Fennell et al reference relates to transformation and not gene repair. Transformation employs much larger polynucleotides with differences in properties as discussed in prior responses.

Withdrawal of the 103 rejection to Claims 24 and 28-36 is respectfully requested.

Double Patenting

Applicants will address any double patenting issues as they arise when claims are allowed in this application. Applicants appreciate the Examiner's note in this regard.

New Claims

Claims 39-41 have been added in this response. Applicants believe that all of the arguments presented above apply to these new claims and that new Claims 39-41 are in condition for allowance.

In view of the foregoing remarks and the amendments above, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

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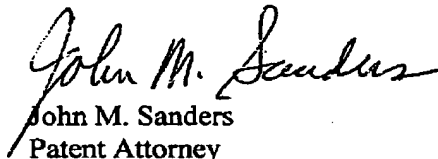
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The Commissioner is hereby authorized to charge any fees under 37 CFR §§ 1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The Applicants also invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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